

On the Genera *Cymatophoropsis* HAMPSON and *Trispila* HOULBERT (Lepidoptera, Noctuidae)

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It was in 1944 when an unexpected discovery of a rather isolated and remarkable moth, *Trispila trimaculata* BREMER, was reported in Japan. Several specimens were captured in Morioka, northern Honshu over a lamp in an orchard. The authors had been unable to study this interesting insect for a long time, but a good fortune was recently given them by Mr. MASAO OKANO, Iwate University, and Mr. TADASHI TANAKA, Utsunomiya University, both of whom kindly gave them a chance to study their specimens through a loan and gift of specimens.

The moth was first treated as a thyatirid (or cymatophorid) for no other reason than that it has a superficial resemblance to a certain species of *Thyatira*, later it was wrongly associated with sarothripine genus *Risoba*, and finally settled in the Noctuidae, a new genus *Trispila* having been established for it by HOULBERT. However, its systematic position in the family was not mentioned by HOULBERT, nor by junior authors.

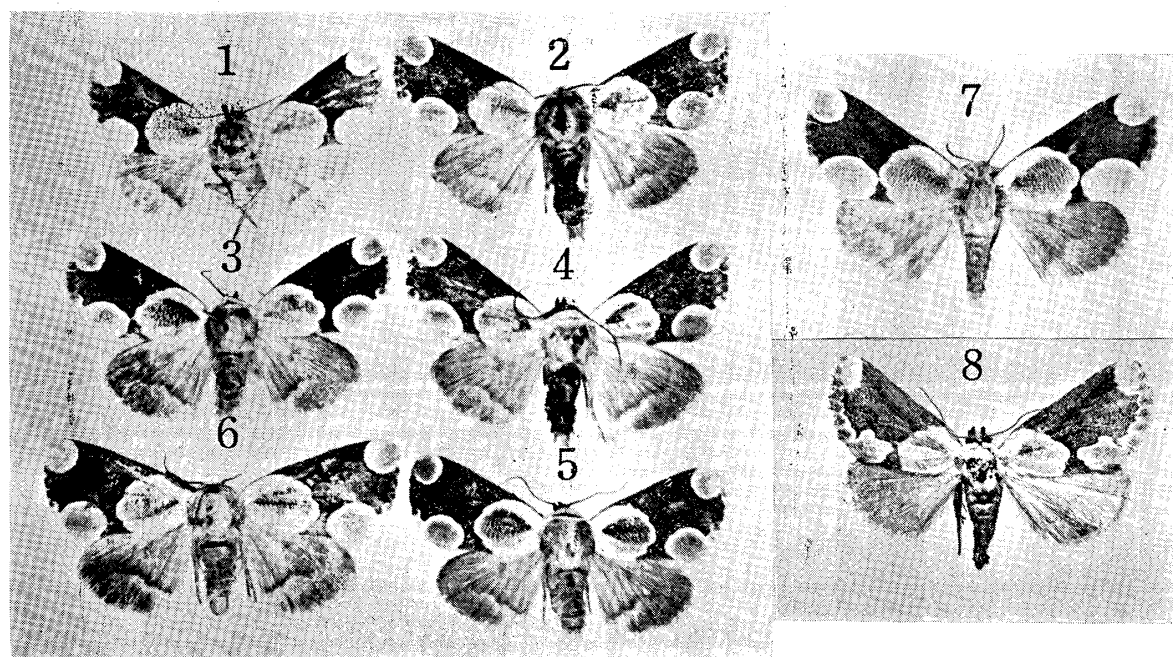


Fig. 1. *Cymatophoropsis trimaculata tanakai* subsp. nov., ♂ (Morioka); fig. 2-5 ditto, ♂ (Utsunomiya); fig. 6 ditto, ♀ (Utsunomiya); fig. 7. *C. t. formosana* (MATSUMURA), ♂; fig. 8. *C. sinuata* (MOORE), ♀.

Results of our investigation show that this moth is congeneric in all possibilities with Indian *Cymatophoropsis sinuata* (MOORE), the genotype of *Cymatophoropsis* HAMPSON. Therefore *Trispila* will here be sunk into it, and at the same time we emphasize that *Cymatophoropsis* may better be placed in the Apatelinae (=Acronictinae, s. str.) by the structure of the male genitalia.

Besides the above named friends, our appreciations are due to Mr. D. S. FLETCHER, British Museum (Natural History), London, for the gift of Indian specimens, to Mr. Y. KUROSAWA, National Science

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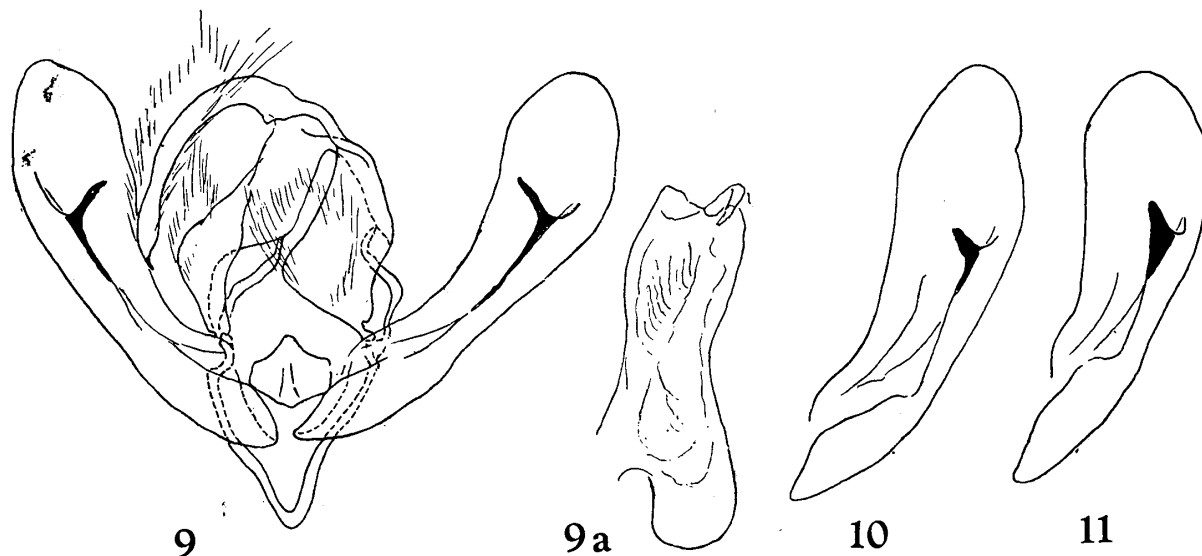
Museum, Tokyo, for the loan of Formosan moths in his institute, and also to Mr. PAK SEA WOOK, Seoul, for the gift of a Korean specimen.

Genus *Cymatophoropsis* HAMPSON

Cymatophoropsis HAMPSON, Fauna Ind., Moths, 2 : 297, 1894. Type : *sinuata* MOORE, original designation. *Trispila* HOULBERT, Etud. Lép. Comp. rend., 18 : 235, 1921 ; SEITZ, Macrolep., suppl. 2 : 193, 1933 -**syn. nov.** -Type : *trimaculata* BREMER, original designation.

Antenna of the both sexes simple, minutely ciliate; front smooth; eyes naked, large. Palpus up-turned, moderately long, smoothly scaled. Thorax covered with hair and scaly hair admixed, without tufted crest. Abdomen smooth, dorsal crests absent. Forewing rather broad, apex round, termen roundish, even. Neuration normal; forming an areole. Hindwing with M_2 well developed, almost parallel to M_1 , arising from about $1/3$ way up on cell. Male genitalia symmetrical. Uncus stout, pointed. Tegumen broad, heavily swollen ventrally, with long string-like pleurite to join vinculum; peniculus absent. Valva simple, ample and rounded apically; harpe a minute bar, without basal sclerite; ampulla absent; without any other modifications. Juxta weak, somewhat hexagonal. Saccus short, moderate. Aedoeagus rather short, cornutus wanting.

HAMPSON does not deal with the genus *Cymatophoropsis* in any published part of "Catalogue of Lepidoptera Phalaenae in the collection of British Museum". This means, supposedly, that the genus had been fallen into his poorly defined large subfamily "Noctuinae", due to its quadrifid neuration of the hindwing, combined with some other characteristics. Though it is generally essential to divide roughly this large family into two main sections by the position and the strength of M_2 of the hindwing, there occur a few cases that an automatic application of the HAMPSON's key (Cat. Lep. Phal. Brit. Mus., 4 : 3-4, 1903) results in that even closely related species are artificially grouped one from another. For instance, the genus *Autophila*, which HAMPSON omitted from the Catalogue, is recently associated with the *Amphipyra*-*Pyrois* group; that the revised position is correct is proved by the structure of the genitalia³⁾.



Male genitalia of : -

Fig. 9. *Cymatophoropsis trimaculata formosana* (MATSUMURA). a-aedoeagus ; fig. 10. *C. t. tanakai* subsp. nov. ; fig. 11. *C. sinuata* (MOORE).

3) BOURSIN, Ch., Mitteil. Münch. Ent. Ges., 30 : 512-514, 1940 ; Zeit. Wien. Ent. Ges., 40 : 164-171, 1955.

A similar definition is made in the case of the genus in question, but we are more inclined to put it provisionally into the Apatelinae (=Acronictinae, s. str.) than into the Amphipyridae according to the genitalic structure. It is a well known fact that the Apatelinae is more definitely characterized by the larval structure (the presence of tufted hair instead of usual single primary setae or densely haired skin, or combined together) than by rather vague imaginal characters. It is fortunate, however, that the male genital features may also be applicable, even if not definitely, to separate the apateline genera the larva of which are unknown from the other group of the Amphipyridae. In *Cymatophoropsis*, the above described feature of the male genitalia will satisfactorily justify the position we now assign.

Another noteworthy fact was revealed in the case of the genus *Belciana* WALKER now standing also in the Noctuidae. It was pointed out by DRAUDT⁴⁾, citing MELL's unpublished note, that the larva of *B. virens* BUTLER observed in China shows a quite apateline (or hairy) appearance like *Colocasia*. The genitalia of that species appear to fit basically with those of Apatelinae, but have a slight modification. On the other hand, the subfamily Pantheinae (=Momiinae) is known to relate closely to the Apatelinae in the larval structures, regardless of having the quadrifid neuration. Thus, separation of these two subfamilies may be of little importance to secure a natural classification, and apart from technical difficulties it will be reasonable to regard them as a single group, being typically trifold but including some atypical forms, having well developed M_2 of the hindwing, combined with or without hairy eyes. This action will practically revive the use of term Apatelinae of WARREN⁵⁾ or of the earlier authors, and then *Cymatophoropsis* and *Belciana* will play an important role as transitional between these subfamilies.

Cymatophoropsis trimaculata trimaculata (BREMER)

Thyatira trimaculata BREMER, Mém. Acad. Sci. St. Pétersbourg, (7) 8 : 47, t. 5, f. 5, 1864 ; WARREN in SEITZ, Macrolep., 2 : 324, t. 49e, 1913.

Risoba trimaculata LEECH, Trans. Ent. Soc. Lond., 1900 : 520, 1900.

Trispila trimaculata HOULBERT, Etud. Léop. Comp. rend., 18 : 236, 1921 ; O. BANG-HAAS, Horae Macrolep., 1 : 82, 1927 ; SEITZ, Macrolep., suppl. 2 : 82, 1927.

Specimen examined : 1 ♂, Seoul, Central Korea, 28 June 1956 (PAK SEA WOOK).

Hab. : Amurland, Ussuri, Korea.

Cymatophoropsis trimaculata tripunctata (O. BANG-HAAS)

Thyatira trimaculata tripunctata O. BANG-HAAS, Horae Macrolep., 1 : 82, t. 10, f. 12, 1927.

Thyatira tripunctata SEITZ, Macrolep., suppl. 2 : 193, 1933.

Hab. : China (Kansu).

This race is unknown to us.

Cymatophoropsis trimaculata tanakai subsp. nov.

Trispila trimaculata (part.) SUGAHARA, Ins. World, Gifu, 48 : 6, 1944.

Though variable, the Japanese population is separated from the nominate race and *tripunctata* (O. BANG-HAAS) by larger and more smoothly rounded basal spot and apical mark. Also similar to *dubernardi* (HOULBERT) from Tsekou, but distinguished from it by more widely separated basal and tornal markings.

In Japan the present species occurs very locally, merely known from the below two cities in north-

4) DRAUDT, M., Mitteil. Münch. Ent. Ges., 40 : 163-164, 1950.

5) WARREN, W., in SEITZ, Macrolep., 3 : 10-18, 1909.

eastern Honshu, where it seems to be not uncommon and is chiefly taken at the lamps in orchards in August every year.

Specimens examined : 1♂, Morioka, Iwate Pref., 24 Aug. 1950 (M. OKANO) ; 2♂♂, Utsunomiya, Tochigi Pref., 4-5 Aug. 1954 ; 4♂♂, 1♀, 31 July, 12-23 Aug. 1956 (T. TANAKA).

Hab. : Japan (Honshu).

Cymatophoropsis trimaculata formosana (MATSUMURA)

Thyatira trimaculata formosana MATSUMURA, Journ. Coll. Agr. Hokkaido Imp. Univ., 19 (1) : 14 pl. 5, f. 42, 1927.

Thyatira trimaculata f. *formosana* MATSUMURA, 6000 Ill. Ins. Jap. : 677, no. 338, 1931.

The Formosan race is a little larger than the Japanese, about 34 mm in expanse. The spot on the tornus of forewing is larger and more elliptical, extending basewards to conjoin at a point with that on the base, the brown fleck within it much denser and more extensive. Lunar series along termen between the spots on apex and on tornus are less developed or often not traceable, being ill-defined interiorly with yellow-white.

The male genitalia are also different slightly in the shape of the harpe, which is apparently shorter and thicker than in the Japanese race. Otherwise almost identical.

Specimens examined : 4♂♂, Formosa, without exact data (T. KANO), in the collection of the National Science Museum, Tokyo.

Hab. : Formosa.

It is possible that *C. expansa* (HOULBERT) (loc. cit., 238, pl. 1588, f. 4018, 1921) from central China is another race closely related to *formosana*, but it has a larger apical spot, and basal and tornal markings are more widely separated.

C. unca (HOULBERT) (loc. cit., 237, f. 66) and *dubernardi* HOULBERT (loc. cit., 240, pl. 1588, f. 4019) from China are apparently local races of *trimaculata*.

Cymatophoropsis sinuata (MOORE)

Gluphisia sinuata MOORE, Proc. Zool. Soc. Lond., 1879 : 405, 1879.

Cymatophoropsis sinuata HAMPSON, Fauna Ind., Moths, 2 : 397, 1894.

The basal pattern and colouration of the forewing are similar to the above species, chiefly differing from it by the narrow apical marking, the conspicuous series of lunar spots on termen, connecting below to nearly rhomboidal spot on the tornus.

The male genitalia are close to those of *trimaculata* excepting a slight difference in the shape of the harpe.

Specimens examined : 1♂, 1♀, "Sultanpur, Cap. G. Young coll. 1888", ex coll. Brit. Mus. (Nat. Hist.).

Hab. : India.

摘 要

こゝに扱う珍しい蛾, *Cymatophoropsis trimaculata tanakai* INOUE et SUGI ミツモンケンモン (改称) は, 1944年に初めて盛岡から記録されたが, その後新産地が発見されていない。私達はこゝに宇都宮を新産地として報告する。これら両地では稀ならず採集されるようで, 8月頃果樹園の電灯に飛来している。私達の研究によれば, この種に対して創られた属 *Trispila* HOULBERT は, インドの *sinuata* MOORE を模式種とする *Cymatophoropsis* HAMPSON の全くの異名で, 破棄しなければならない。属の位置についてこれまで言及されたことがないが, ♂交尾器の形態からケンモンヤガ亜科に置くべきであると思う。ウスリー, 朝鮮; 中国; 台湾に別亜種を産する。日本産の亜種には上記の新名を与えた。

なお文献の一部について九州大学農学部昆虫学教室の山本英穂氏を煩わせたことを厚く御礼申し上げる。